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IN TWO SECTIONS

Section I

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Modern Trends in Cost Accounting

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Modern Trends in Cost Accounting

By

A. W. BASS,

Director of Budgets,

Westinghouse Electric & Manufacturing Company,

East Pittsburgh, Pa.

The National Association of Cost Accountants does not stand sponsor for views expressed by the writers of articles issued as Publications. The object of the Official Publications of the Association is to place before the members ideas which it is hoped may prove interesting and suggestive. The articles will cover a wide range of subjects and present many different viewpoints. It is not intended that they shall reflect the particular ideas of any individual or group. Constructive comments on any of the Publications will be welcome.

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EDITORIAL DEPARTMENT NOTE

There are relatively few men in the accounting field who have more than a superficial appreciation of the necessity of making accounting facts useful in managerial guidance. Many accountants feel that they know all that there is to be known in this field, and, being in that frame of mind, are usually unsuccessful in fitting the results of their efforts into the changed tempo of economic life. Our paper this time deals broadly with the best that there is in industrial accounting. Details are eliminated from consideration, and the author places before the reader a picture of broad expanse in the industrial scene. He has clearly pointed the way to any properly equipped accountant toward maximum effectiveness in his work.

Mr. A. W. Bass, the author of this paper, is too well known to a large number of our members to need any introduction. He has spoken before many of our chapters and has appeared in the technical programs of several conventions. He has been associated for a number of years with the Westinghouse Electric and Manufacturing Company at East Pittsburgh, Pennsylvania, and is at present the Director of Budgets of that organization. Prior to his connection with the Westinghouse Company, he was Secretary and Auditor of the Webster Manufacturing Company of Tiffin, Ohio, having resigned that position to enter the Westinghouse organization in 1912. He is a past President of our Pittsburgh Chapter and is a member of the National Board of Drectors, during this past year having been in charge of the Department of Standardization. His paper was delivered before the Utica and Syracuse Chapters during the past season.

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MODERN TRENDS IN COST ACCOUNTING

THE generation represented by most of those in the audience tonight has undoubtedly seen developments exceeding both in variety and importance those of any generation which has preceded. In the line of transportation, we have seen the introduction of the electric street car, and automobile, and aeroplane. In the line of amusements, we have seen the wax cylinder of the initial talking machine develop into the flat discs of the present phonograph. We are almost inclined to forget that these talking machines are a product of our own generation, because they have so largely given place to the radio as an item of home amusement. In amusement lines outside the home, we have seen the rapid development of the moving picture with the more recent addition of the voice and color, and we are quite likely to see in this generation a fairly successful development of the three-dimensional picture. Television is already a reality, though not yet in a form to make desirable its use for public performances.

In addition to the items of home amusement already mentioned our generation has been outstanding in the development of home comforts and semi-automatic servants. We might be said to be living today in the electric home with its motor driven washing machines, mangles, vacuum cleaners, kitchen utensils, ventilating and heating systems, and refrigeration as well as the numerous electric table devices.

We frequently are confronted with the radically new ideas and habits of the younger generation. Is it any wonder that with all these new surroundings their ideas should differ greatly from those of us whose early life was surrounded by the kerosene lamp or even the candle, the horse or mule-driven street car, the stereopticon show for polite entertainment, or the ten and twenty cent melodrama for a really big evening, the horse and buggy for adventure beyond the city's limits and the various other familiar items of thirty to forty years ago.

In business and industrial life, we have seen a similar revolution in ideas and methods of organization. While the corporate form of management is over a hundred years old, its real growth has taken place since the limitation of stockholders' liability, and where, in the youth of many of us, the individually owned concern or part-

nership was once the predominating form of organization, we find today that over two-thirds of the volume of the industrial business is in the hands of corporations. Added to this, we have within recent years seen the rapid increase in size of these corporations and the creation of huge holding companies whose intricacies rather stagger most of us. Along with these huge combinations of capital, and largely because of them, there has been rapid progress made in the mechanization of industry bringing with it a host of new problems. Management has been transferred from the hands of interested owners to those of hired experts and the effects of this radical change we are only just beginning to realize. With the mechanization of industry, productive capacity of manufacturing plants has been so increased that the twelve-hour day and seven-day week which were so common in the early days of this generation have practically disappeared and given place to the eight-hour day and the five or six-day week. While it may not prove economical to further reduce the length of the working day, there is every reason to expect a further shortening of the working week with possibly ultimately a form of rotating employment which will periodically eliminate an entire week or more. This reduction of the working period and increase in the time available for educational and recreational activities will undoubtedly have far-reaching effects. It is quite safe to state that some of the huge industries of the future will be those devoted to the creation and operation of recreational facilities, for the mental state of a people cannot be long maintained in a healthy condition if the demands of work are removed without substituting other activities.

Control of Equipment Essential

All of these changes in our social and industrial life are bringing with them new problems of management. Twenty-five years ago, we looked upon labor as the chief problem and it was through a better control of this commodity that we looked for the needed improvement in costs and quality which the demands of competition made necessary. Our problems of today are less and less the problems of labor control but are shifting rather to the more efficient control of the physical equipment, which is becoming the predominating factor in industrial operations. If we are to make this huge investment in physical equipment really productive, it must

be through keeping it in reasonably continuous operation, and this is more than a problem of mere sales volume. It means such standardization of designs in our production as will make limited equipment adaptable to the various varieties we manufacture. It also means such carefully studied layouts of equipment as will reduce to a minimum the amount of travel required by material during the various manufacturing processes.

With the increase in productive capacity of our plants, new importance is given the problems connected with the distribution of these products to the consumers. Research work is assuming increased importance, and is becoming a regular activity in many lines which a few years ago had given but little thought to its possibilities. Another big problem of management is to be ever on the alert in the study of the application of all the many forces and arts which our generation has developed.

If I have seemed to dwell at some length on some of these many fundamental changes which have been crowded, one on top of another in recent years, it is because I feel it important that those in accounting lines should have impressed on them the fact that management is becoming a problem surrounded by so much that is new and untried that it needs guidance and support from any branch of the organization which can offer help.

Has Accounting Kept Pace With Industry

In all this turmoil and change, what has been happening to accounting work itself? Certainly in the midst of these other developments it cannot stand still very long and continue to be a recognized factor in business life.

Originally, accounting interested itself chiefly with the financial operations of a company. It maintained its records of accounts payable, accounts receivable, cash on hand and produced, at reasonable intervals, some semblance of a balance sheet. To that end it satisfied only the immediate needs of the owner of the business or of those from whom the owner might be seeking credit. The accounting records offered little in the way of information as to the operating results, excepting at the time of the annual inventory. Competition in this earlier period was a relatively minor issue for two very good reasons. First, there were fewer concerns operating in the various lines and often the concerns in a similar line

had but little effect on each other competitively, because the field of distribution of one concern would often not reach as far as the territory of the next concern in its line. This condition gradually changed, however, with the improvement in transportation facilities and the greater introduction into distribution activities of the jobber. With these latter two changes, there developed a need for costs as a basis for more intelligent pricing. With the knowledge of these costs there developed a new possibility, namely, a more current knowledge of operating results in terms of profit and, where previously the annual inventory was the only time at which a picture of profits could be secured, it now became possible to establish a reasonably accurate cost of each month's billings and so determine the monthly profits.

Even with this accomplished, however, accounting was furnishing only a general picture of operations and was still trailing the facts by a considerable distance.

Such accounting is far from sufficient to meet the needs of those executives who have been passing out of plants employing from three to five hundred people into plants where his field of supervision covers many thousands. Under these latter conditions physical contact with the details of operations are no longer possible. He can no longer sense, through personal acquaintance with the workers, the mental attitudes which may have developed in his shops. It is no longer possible even to maintain acquaintance with the greater part of the supervisory force. He is surrounded by an increasing volume and variety of demands for judgment on policy questions which become more and more difficult to handle in view of his broken contact with shop activities. He becomes increasingly conscious of the need for re-establishing some channel through which he can again keep himself intelligent with regard to the important factors of operation. He needs, first, facts, and then, of even greater importance, measuring sticks with which to evaluate these facts in terms of efficient operation. He appreciates pretty clearly what general class of service he needs and also that the type of information formerly given him through his accounting department no longer meets that need. He wants food and they offer him straw.

Budget Development

While these changes in the demands of the executive have been taking place, however, accounting work has by no means been standing still. It has recognized the development of this need for day by day control of operations and has attempted to meet the situation in various ways, one of which has been through the establishment of budgets. For a time there might even have been what might be called a condition of "budget hysteria" which I suspect was considerably augmented by a certain individual hailing from Chicago who laid aside the machine-gun equipment supposed to be worn by the normal native out there, and started for Washington armed only with an underslung pipe and a bunch of pugnacity. Arriving there he undertook the administration of the government budget and however unpopular that budget may have been with certain of the government heads, its unbending "Hell and Maria" operation under this individual rather tickled the fancy of the general public and gave a newsy touch to a subject ordinarily considered a bit forbidding.

The early applications of budget work in business life centered mainly about the control of sales expenses, engineering expenses, and factory overheads. While in many cases these attempts at budgeting proved to be little more than a gesture, due to the fact that behind the budgeting work there had been little real planning and little real authority, the attempts at least were educative and helped to pave the way for what might seem to some of us a new hysteria. I refer to the much-discussed question of standard costs.

Standard Costs

The emotion of love has doubtless been an active factor in life ever since the world began and yet one of the current songs of the day asks the question "What Is This Thing Called Love?" Accounting literature for the past few years, as well as convention programs, have been liberally smeared with discussions of standard costs and yet I doubt not that there are many who would still like to ask the question "What is this thing called standard costs?" To some it means little more than a standard derived from an average of past actuals and even if that were all, the adoption of it would have some value as a general basis for establishing selling prices, setting inventory values and arriving at fair statements of current

operating profits, but the large field for standard cost work, in my opinion, reaches considerably beyond these particular functions.

As we look back, it seems quite amazing to many of us that the accountant was so backward in developing some of the main principles connected with standard costs. In fact, it was probably not accountants but rather engineers who have been chiefly responsible for giving emphasis to and hastening the development of principles which the accountant had for many years been recognizing in a small way. We all know that, in the matter of factory overheads, it has been the practice of most cost accountants to use what might be called a standard overhead and disregard in their cost work the various fluctuations taking place in actual overhead conditions such as arise from variations in shop activities, abnormal maintenance charges, etc. It was recognized that such a standard overhead was essential if we were to avoid the necessity of almost continuous revision of costs and if we were to have anything approximating a normal cost for general guidance of selling, engineering and administrative operations. Those concerns engaging in the manufacture of relatively standard lines were also setting up what might be called a standard labor cost through the use of average operation costs, but those concerns conducting a jobbing business and, therefore, depending largely on the job order cost system were still continuing to establish each job cost on the basis of the actual labor charged against the job even though, in the matter of overhead, they had already recognized the need for the standardized overhead cost. This seems like an inconsistent policy to have continued so long for we all recognize that labor costs are also subject to a great deal of fluctuation, due to varying rates of pay for labor as well as varying efficiencies of that same labor.

Developing Labor Standards

Until time-study work had been more fully developed, many concerns were not in a position to measure labor efficiency and so establish the labor cost standards which are now becoming possible. In the minds of many, time-study work looked merely like additional overhead and there remained a question in their minds as to its ability to pay for itself. This attitude toward time-study work, however, is rapidly passing, for while the costs of a well-organized time-study department may amount to as much as four or five per

cent of the direct labor costs, it is quite a common experience to find that after setting proper time values on labor operations and using these as a basis for a properly set up wage incentive system, the productive output of the workmen is quite commonly increased from fifty to seventy-five per cent. There no longer remains any doubt among the more progressive concerns as to the productive value of time-study work and the cost per time limit set is being constantly reduced by the development of formulae covering broad classes of operations by the use of which very accurate limits can be set in a few minutes time without leaving an office. Where we formerly recognized the desirability of a standard overhead we have now found the possibility of taking a further step to standardize the time element behind each labor operation and then take a still further step by standardizing the hourly rate which should be paid for each class of operation.

Material Standards

The same principle is being carried into the standardization of a third principal element of cost which we call material. The standards are set both on the prices of raw material and on the quantity of material to be used in each item of production. This protects our costs from those fluctuations arising in material prices because of large purchases today contrasted with small purchases tomorrow, as well as from the fluctuations of transportation charges as between express, L.C.L. and carload freight shipments. In fact, in these days we are not infrequently confronted with occasional air mail transportation charges amounting to considerably more than the cost of the material itself.

Control Through Standard Costs

While standard costs would have offered considerable of value had they merely eliminated from our costing processes all of these abnormalities connected with overhead, direct labor and material, the executive of today sees in standard costs something much more far-reaching than this mere improvement in the accuracy of the cost used for setting selling prices, pricing inventories and costing shipments. He sees behind a properly developed standard cost system an instrument of operating control for which he has been searching.

The accountant's past treatment of the executive may possibly have been flattering, but in many cases it has proved most embarrassing to the executive. The accountant would create a mass of figures which would then be laid on the executives desk with the implication that if the latter properly analyzed them he would probably find something of value. An executive is not necessarily an analyst and even if he did have the rare combination of executive and analytical ability his time does not ordinarily permit of the exhaustive delving into figures which is sometimes necessary to arrive at the really pertinent facts. Either the executive must develop as a part of his staff a statistical or business research department, or what would seem more logical, the accounting department should begin to interest itself in this activity. I favor the accounting department for this work both because it creates the basic data and is therefore in a better position to understand the data and also because I believe if the accountant is forced to digest some of his own output, he will the sooner learn how to dispense with the large element of accounting dross and more thoroughly perfect that which is really worth while.

Standard costs, when properly operated can be made to produce automatically the important facts of operations. It is really only a small part of accounting data that is of importance to an operating head so why ask the executive to go through a prolonged search for these nuggets. The executive is interested only in those departures from good practice which demand action and it is these departures from good practice or variances, as we have come to term them, that a standard cost system ordinarily provides. The executive is asked to view only the exceptional conditions and these are not merely variances from past performance but are rather variances from carefully established standards representing what performance should be. Improvement over past performance might indicate progress but in many cases moderate progress would have no longer been considered satisfactory to the executive could he have seen more clearly how far removed this past or even present performance was from the goal of what should be accomplished.

There is another outstanding effect of a standard cost plan of operation. In the past, one of the best guides given to the operating head by the accounting department was a statement of com-

parative factory costs of certain important items of manufacture in a series of successive periods. While this gave him some intelligent idea as to the trend of his costs, it gave him but little idea as to the basic reasons for those trends, and when the trend was unsatisfactory, it often took a very exhaustive analysis of one of these item costs to determine the particular cause. The variances developed under a standard cost system deal directly with those general causes in cost trends such as would effect not merely the cost of one item, but often the cost of many.

Let us assume a labor variance is developing. Under standard costs, we can readily determine whether this labor variance is the result of an increase in the average hourly rates; whether due to an increase in extra labor operations; whether due to an overrun of the time limits; or whether it arises from excessive overtime. Each of these are basic conditions which are important to the supervising head, since when they exist, they are likely to be affecting a wide range of his product. Let us again assume that an overhead variance is developed. Since standards have been set on each class of overhead expenses, it becomes readily possible to determine whether the variance is due to an excess in expense of supervision, in shop supplies, maintenance or any of the other general classes segregated in our factory overhead statements.

I am particularly desirous of emphasizing this feature of standard cost work for I think too often in our discussions of this question, we are thinking of standard costs merely as a better method of arriving at costs of individual items of production, but the whole system behind the development of these specific costs is one which can be made to develop something which, in my opinion, is of even greater importance. A true statement of the factory cost of items is important, but a true statement of cost conditions behind a whole range of products is practically invaluable, and it is this broad intelligent presentation of cost conditions which we are beginning to find it possible to lay before our executives today, and at a time when these executives are feeling, as never before, the need of guidance. Accounting work has not been marking time, but has been keeping step with the rapid changes taking place in our industrial life, but it is safe to say that a large majority of our accounting departments have not as yet taken hold of these newer developments in accounting with anything like the vigor which

today's conditions demand, and it is because I believe this that I have spent so much time tonight in talking about what seem like familiar subjects in the hope that we may all have a better appreciation of how some of these familiar subjects fit into the broad need which is developing. The important job ahead of all of us will be along the line of a more thorough and scientific method of setting the standards or budgets. We have probably approached closer to the ultimate in our direct labor standards than in any other factor of our costs, for the setting of time standards has already developed into what might safely be called a science and many concerns have also gone a considerable distance in establishing job classifications and consistent rates of pay for the various classifications.

In the matter of material standards, the engineering specification usually provides in its bill of material a pretty carefully worked out indication of the character and quantity of the material to be used though, in some lines of manufacture, the spoilage and incidental wastes can be finally determined only by manufacturing experts.

Probably the largest and most unexplored field of standard setting is in the matter of overheads, and the final working out of intelligent standards for the various classes of operating overheads must be the joint work of the accountant and the industrial engineer.

When talking to a group of N. A. C. A. men I am always conscious that I am facing a picked group of those who have their eyes set on the future and are pressing ahead, and as such, my suggestions to you would be to throw your full support behind those activities in your various companies which are going to be a factor in the final development of these standards by which your managing heads are to secure a day by day measurement of their accomplishment. Real labor standards cannot be established without well-developed time-study departments, so if that branch of work in your companies is being neglected, it should have accounting support for you are vitally interested in the product of that department if you are ever to have an accurate barometer of labor costs to place before your manager. It also lies in your hands to develop much in the way of statistical overhead data such as will form a valuable starting point for the setting of overhead

standards. This will never be best done through statistical data alone, but must be supported and supplemented by men of an industrial engineering type, some of whom can be found in most organizations. If you as accountants will search out these men, cultivate them and form a working union with them, we should, in the years immediately ahead, see a rapid development in the factor which I consider at present our most undeveloped problem, namely; the setting of overhead standards. With these overhead standards on a more dependable basis the accounting department will be able to mold into final shape a picture of standard performance which every executive today is seeking, and which, in its final form, should reach him through accounting channels.

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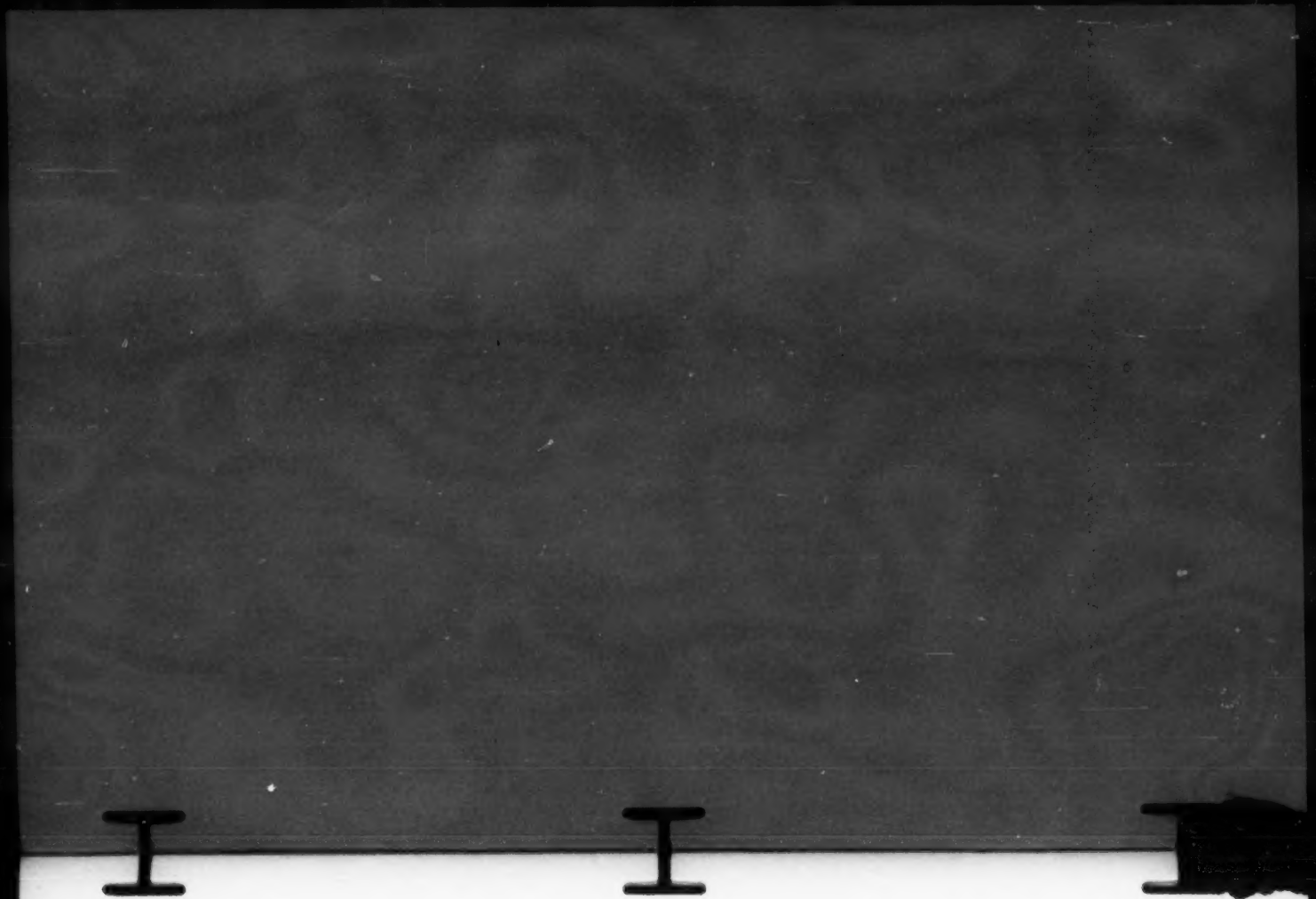

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